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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/816,064

04/01/2004

Bruno Kristiaan Bernard De Man

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7590

10/04/2006

GENERAL ELECTRIC COMPANY  
GLOBAL RESEARCH  
PATENT DOCKET RM. BLDG. K1-4A59  
NISKAYUNA, NY 12309

EXAMINER

SONG, HOON K

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 10/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/816,064	DE MAN ET AL.	
	Examiner	Art Unit	
	Hoon Song	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2006.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 3,6-27,30,32-43,45,46,49 and 59-64 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-27,32-43,45,46,49 and 59 is/are allowed.
- 6) ☒ Claim(s) 3,30,60,61,63 and 64 is/are rejected.
- 7) ☒ Claim(s) 62 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “a plurality of detector elements of more than one size” as claimed in claim 3 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 30, 60-61 and 63-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nahaliel et al. (US 6243438B1) in view of Zhou

Regarding claims 3, 30 and 61-62, the prior art fails to teach a volumetric stationary CT system comprising:

at least one stationary detector (70) comprising a plurality of detector elements of more than one sizes (50-68, figure 4, varying resolution as claimed in claim 61, two stationary detector as claimed in claim 62) placed in the at least one stationary detector (70), wherein the at least one stationary detector extends generally around at least a portion of an imaging volume (figure 3b);

a processing circuit (86) operably coupled to the at least one detector and configured to receive the plurality of projection images and to from one or more reconstructed slices representative of the volume being images; and

an operator workstation operably coupled to the processing circuit configured to display (87) the one or more reconstructed slices and

wherein the at least one stationary detector and at least one x-ray source (22) are configured to cooperate to contribute towards mathematical completeness of acquired volumetric data for image reconstruction (CT reconstruction).

However Nahaiel fails to teach the x-ray source is a stationary x-ray source with a source controller for triggering one or more emitters in the at least one stationary distributed x-ray source for acquiring volumetric data by the at least one stationary detector.

Zhou teaches a stationary x-ray source (802) with a source controller for triggering one or more emitters in the at least one stationary distributed x-ray source for acquiring volumetric data by the at least one stationary detector (figure 8, paragraph [0071]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to adapt the x-ray source of Nahaiel with the stationary x-ray source as taught by Zhou, since stationary x-ray source would reduce system vibrations caused from rotational components.

Regarding claims 63-64, Zhou teaches the one or more emitters comprises carbon based emitters (paragraph [0024]).

#### ***Allowable Subject Matter***

Claims 6-27, 32-43, 45-46, 49 and 59 are allowed over prior art.

Claim 62 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 6-17 and 59, the prior art fails to teach the at least one stationary detector includes a pair of ring detectors and wherein at least one ring source of the one or more full ring sources is positioned between the pair of ring detectors as claimed in dependent claim 6.

Regarding claims 18 and 62, the prior art fails to teach one or more line sources extending at least along a Z-direction.

Regarding claims 19-25, the prior art fails to teach a volumetric stationary CT system having at least one stationary ring detector extending generally around a portion of an imaging volume and more than one partial ring sources flanking the stationary ring detector on alternating sides of the stationary ring detector and configured to emit radiation toward the ring detector as claimed in independent claim 19.

Regarding claims 26-27, the prior art fails to teach the at least one stationary detector includes a helical detector, and wherein the at least one stationary distributed X-ray source includes a helical source placed adjacent to the helical detector as claimed in independent claim 26.

Regarding claims 32-43, the prior art fails to teach the at least one stationary detector includes a pair of ring detectors and wherein at least one ring source of the one or more full ring sources is positioned between the pair of ring detectors as claimed in independent claim 32.

Regarding claim 45, the prior art fails to teach a method of measuring additional data by employing line sources as claimed in independent claim 45.

Regarding claims 46 and 49, the prior art fails to teach providing one or more ring

detectors placed between two or more ring sources as claimed in independent claim 46.

***Response to Arguments***

Applicant's arguments with respect to claims 3, 30, 60-61 and 63-64 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoon Song whose telephone number is (571) 272-2494. The examiner can normally be reached on 9:30 AM - 7 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272 - 2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HKS